L Number	Hits	Search Text	DB	Time stamp
1	31733	709/$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 23:13
2	2513	710/10 710/18 370/384	USPAT	2004/10/14 23:17
-	39	(multicast near2 channel) and advertisement	USPAT	2004/10/14 18:52
-	5	(multicast near2 channel) with advertisement	USPAT	2004/08/31 22:16
-	4	((multicast near2 channel) with advertisement) and network and rout$4	USPAT	2004/08/31 22:16
-	0	((multicast near2 channel) with advertisement) and network and rout$4 and xml	USPAT	2004/08/31 22:16
-	24	(multicast near2 channel) and advertisement and xml	USPAT	2004/10/14 18:44
-	23	(multicast near2 channel) and advertisement and xml and rout$4 and protocol	USPAT	2004/08/31 22:18
-	0	(multicast near2 channel) and advertisement and xml and routable and protocol	USPAT	2004/10/14 23:15
-	23	(multicast near2 channel) and advertisement and xml and rout$4 and protocol and (advertisement advertizement ad)	USPAT	2004/08/31 22:18
-	22	(multicast near2 channel) and advertisement and xml and rout$4 and protocol and (advertisement advertizement ad) and object and exchange	USPAT	2004/10/12 21:13
-	0	(multicast near2 channel) and advertisement and xml and rout$4 and protocol and (advertisement advertizement ad) and (object near2 exchange)	USPAT	2004/08/31 22:19
-	112	(multicast near2 channel) and advertisement and xml and rout$4 and protocol and (advertisement advertizement ad) and object and exchange	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/08/31 22:23
-	169	obex	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:15
-	25	obex	USPAT	2004/08/31 22:26
-	0	obex and multicast and adverti$5 and (channel link) and protocol and rout$4	USPAT	2004/08/31 22:25
-	0	obex and multicast and adverti$5	USPAT	2004/08/31 22:25
-	0	obex and multicast	USPAT	2004/08/31 22:25
-	0	obex and advertisement and protocol	USPAT	2004/08/31 22:26
-	0	(multicast near2 channel) and advertisement and xml and obex	USPAT	2004/08/31 22:32
-	0	(multicast near2 channel) and advertisement and xml and rout$4 and protocol and (advertisement advertizement ad) and (object adj exchange)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:14
-	0	(multicast near2 channel) and advertisement and xml and rout$4 and protocol and (advertisement advertizement ad) and (object adj exchange obex)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:14
-	27	obex and (multicast pointtomultipoint)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:17
-	8	obex and (multicast pointtomultipoint) and advertis$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:18

-	11	(obex (object near2 exchange near4 protocol)) and (multicast pointtomultipoint) and advertis$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:24
-	4	("5638399" | "5930700" | "6091956" | "6167255").PN.	USPAT	2004/10/12 21:20
-	35	(obex (object near2 exchange near4 protocol)) and (multicast pointtomultipoint)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:22
-	16	"6446127"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:53
-	225	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and (multicast pointtomultipoint) and advertis$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:25
-	142	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint) near3 channel) and advertis$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:26
-	141	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint) near3 channel) and advertis$5 and stor$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 22:19
-	1	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint) near3 channel) and advertis$5 and stor$3 and (service with location with discovery with protocol)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:40
-	3	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint) near3 channel) and advertis$5 and stor$3 and (service with location with discovery with protocol(slp sdp))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:42
-	3	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint) near3 channel) and (service with location with discovery with protocol (slp sdp))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:42
-	47	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint)) and (service with location with discovery with protocol (slp sdp))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 21:41
-	160	(guttman).in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:47
-	1	(erik near guttman).in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:46
-	0	(guttman).in. and sdp	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:47

-	0	(guttman).in. and slp	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:47
-	0	"6446127" and slp and sdp and obex	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:48
-	0	"6446127" and obex	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:48
-	9	(schuster).in. and Irda	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:13
-	0	((schuster).in. and Irda) and multicast	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:55
-	0	((schuster).in. and Irda) and advertisment and obex	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:55
-	0	((schuster).in. and Irda) and obex	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:55
-	0	(schuster).in. and Irda and obex	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/12 21:55
-	54	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and (multicast pointtomultipoint)	USPAT	2004/10/12 22:23
-	5	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and (multicast pointtomultipoint) and (slp sdp)	USPAT	2004/10/12 22:22
-	41	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and (multicast pointtomultipoint) and listen$3	USPAT	2004/10/12 22:23
-	35	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and (multicast pointtomultipoint) and listen$3 and advertis$5	USPAT	2004/10/12 22:23
-	5	("5386568"|"6032198"|"6247020"|"6351776"|"65912️HPAT.PN.	USPAT	2004/10/14 18:45
-	1	"6799318"	USPAT	2004/10/14 18:45
-	32	(multicast near2 channel) with listen$3 and advertisement	USPAT	2004/10/14 18:54
-	0	(multicast near2 channel) with listen$3 and (rout$5 same protocol same advertisement)	USPAT	2004/10/14 18:55
-	3	(multicast near2 channel) and (rout$5 same protocol same advertisement)	USPAT	2004/10/14 18:55
-	0	protocol and sdp and multicast and slp and irda and advertisement and rout$5 and transport and listen$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:14
-	2	protocol and sdp and multicast and irda and advertisement and rout$5 and transport and listen$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:15

-	1135	transport adj layer and multicast	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:16
-	5	transport adj layer and (multicast with channel with listen$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:18
-	5	(transport protocol$1) adj layer and (multicast with channel with listen$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:19
-	16	(transport protocol$1) near2 (layer framework) and (multicast with channel with listen$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:23
-	18	(transport protocol$1) near2 (layer framework) and (multicast with channel$1 with listen$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:23
-	7	(transport protocol$1) near2 (layer framework) and (multicast with channel$1 with listen$3)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:24
-	0	multcast same channel$1 same advertisement same rout$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:26
-	3	multicast same channel$1 same advertisement same rout$5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:27
-	7133	multicast	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:31
-	4	multicast and routable adj network	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:29
-	427	multicast and (multi near2 protocol$1 multi$protocol$1)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:32
-	14	multicast and (multi near2 protocol$1 multi$protocol$1) and channel and listen$3 and advertisement	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:57
-	125	object with data with mapping with relational	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 21:21
-	12	object with data with mapping with relational with (utility tool)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:50
-	7	(object with data with mapping with relational with (utility tool)) and java	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:50
-	14	multicast and (multi near2 protocol$1 multi$protocol$1) and channel and listen$3 and advertisement	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:57

-	3	multicast and (multi near2 protocol$1 multi$protocol$1) and (channel$1 near2 listen$3) and advertisement	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 19:57
-	60	object with data with mapping with relational and inheritance	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 21:22
-	60	(object with data with mapping with relational) and inheritance	USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 21:22
-	113	(obex (object near2 exchange near4 protocol) IrOBEX IrDA) and ((multicast pointtomultipoint)) and browser	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 21:42
-	56	(obex (object near2 exchange near4 protocol) IrOBEX) and browser	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/10/14 23:12

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1 Underline People, places, things: web presence for the real world   ▬

Tim Kindberg, John Barton, Jeff Morgan, Gene Becker, Debbie Caswell, Philippe Debaty, Gita
Gopal, Marcos Frid, Venky Krishnan, Howard Morris, John Schettino, Bill Serra, Mirjana
Spasojevic
October 2002 **Mobile Networks and Applications**, Volume 7 Issue 5

Full text available: 📄 pdf(248.58 KB)   Additional Information: full citation, abstract, references, citings, index terms, review

The convergence of Web technology, wireless networks, and portable client devices
provides new design opportunities for computer/communications systems. In the HP Labs'
"Cooltown" project we have been exploring these opportunities through an infrastructure to
support "web presence" for people, places and things. We put web servers into things like
printers and put information into web servers about things like artwork; we group physically
related things into places embodied in web servers. Using ...

Keywords: location-aware computing, nomadic computing, physical-virtual linkage,
ubiquitous computing, world wide web

2 Conferencing: Ubiquitous computing using SIP   ▬

Stefan Berger, Henning Schulzrinne, Stylianos Sidiroglou, Xiaotao Wu
June 2003 **Proceedings of the 13th international workshop on Network and operating
                systems support for digital audio and video**
Full text available: 📄 pdf(96.16 KB)   Additional Information: full citation, abstract, references, index terms

In the past decade, there have been numerous efforts in ubiquitous computing, making
computational resources or communication more widely available. We believe that it is time
to move to a global-scale ubiquitous computing system that is securable, administered by
multiple independent administrators and integrates off-the-shelf hardware and software.
We are developing such a system based on the Session Initiation Protocol (SIP), with
Bluetooth devices for location sensing and Service Location Pr ...

Keywords: SIP, SLP, bluetooth, location based services, scalability, ubiquitous computing

3 Resilient multicast using overlays   ▬

Suman Banerjee, Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan
June 2003 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the**

2003 ACM SIGMETRICS international conference on Measurement and modeling of computer systems, Volume 31 Issue 1

Full text available: 🔨 pdf(244.39 KB)   Additional Information: full citation, abstract, references, citings, index terms

We introduce PRM (Probabilistic Resilient Multicast): a multicast data recovery scheme that improves data delivery ratios while maintaining low end-to-end latencies. PRM has both a proactive and a reactive component; in this paper we describe how PRM can be used to improve the performance of application-layer multicast protocols, especially when there are high packet losses and host failures. Further, using analytic techniques, we show that PRM can guarantee arbitrarily high data delivery ratios ...

Keywords: overlay multicast, randomized forwarding, resilience

4 Ordered Multicast and Distributed Swap   �
Maurice Herlihy, Srikanta Tirthapura, Roger Wattenhofer
January 2001 **ACM SIGOPS Operating Systems Review**, Volume 35 Issue 1

Full text available: 🔨 pdf(587.36 KB)   Additional Information: full citation, abstract

A multicast protocol is *ordered* (or *totally ordered*) if it ensures that messages multicast to a group of nodes are delivered in the same order at each destination node, even when those messages are generated concurrently from several sources. Ordered multicast is a natural foundation for push-based cache coherence and certain kinds of middleware.This paper shows how to reduce the complex problem of enforcing multicast ordering to a simpler distributed coordination problem we call < ...

5 Full papers: SAKM: a scalable and adaptive key management approach for multicast   ▪▪
communications
Yacine Challal, Hatem Bettahar, Abdelmadjid Bouabdallah
April 2004 **ACM SIGCOMM Computer Communication Review**, Volume 34 Issue 2

Full text available: 🔨 pdf(480.59 KB)   Additional Information: full citation, abstract, references

Multicasting is increasingly used as an efficient communication mechanism for group-oriented applications in the Internet. In order to offer secrecy for multicast applications, the traffic encryption key has to be changed whenever a user joins or leaves the system. Such a change has to be communicated to all the current users. The bandwidth used for such rekeying operation could be high when the group size is large. The proposed solutions to cope with this limitation, commonly called *1 affect* ...

Keywords: *Multicat, key management, scalability, security*

6 Multicast and antennas: An adaptive strategy for maximizing throughput in MAC layer   ▪▪
wireless multicast
Prasanna Chaporkar, Anita Bhat, Saswati Sarkar
May 2004 **Proceedings of the 5th ACM international symposium on Mobile ad hoc networking and computing**

Full text available: 🔨 pdf(234.46 KB)   Additional Information: full citation, abstract, references, index terms

Bandwidth efficiency of wireless multicast can be improved substantially by exploiting the fact that several receivers can be reached at the MAC layer by a single transmission. The multicast nature of the transmissions, however, introduces several design.

Keywords: MAC layer scheduling, stability, throughput optimal policy, wireless multicast

7 Multicast and antennas: Antenna orientation optimization for minimum-energy multicast
tree construction in wireless ad hoc networks with directional antennas
S. Guo, O. W. Yang
May 2004   **Proceedings of the 5th ACM international symposium on Mobile ad hoc
networking and computing**
Full text available: pdf(328.65 KB)   Additional Information: full citation, abstract, references, index terms

Energy conservation is a critical issue in wireless ad hoc networks since batteries are the
only energy source to power the nodes. One major metric for energy conservation is to
route a communication session along the routes which require the lowest total.

Keywords: directional antenna, integer programming, minimum-energy routing, multicast
tree, wireless ad hoc networks

8 Secure group management: Secure multicast groups on ad hoc networks
T. Kaya, G. Lin, G. Noubir, A. Yilmaz
October 2003 **Proceedings of the 1st ACM workshop on Security of ad hoc and sensor
networks**
Full text available: pdf(212.24 KB)   Additional Information: full citation, abstract, references, index terms

In this paper we address the problem of secure multicast of data streams over a multihop
wireless ad hoc network. We propose a dynamic multicast group management protocol that
aims at solving problems that are specific to ad hoc networks such as mobility, unreliable
links, and cost of multihop communication. The main idea is to have group members
actively participate to the security of the multicast group, therefore reducing the
communication and computation load on the source. Since the group s ...

Keywords: MANET, multihop ad hoc, secure multicast, tracking

9 3D multimedia environments: Design of a multi-sender 3D videoconferencing
application over an end system multicast protocol
Mojtaba Hosseini, Nicolas D. Georganas
November 2003 **Proceedings of the eleventh ACM international conference on
Multimedia**
Full text available: pdf(872.17 KB)   Additional Information: full citation, abstract, references, index terms

Videoconferencing in the context of 3D virtual environments promises better spatial
consistency and mutual awareness for its participants. However, in the absence of IP
Multicast and limited upload bandwidth of today's DSL connections, the feasibility of such
systems in supporting even a small group of users is in question. This paper presents the
design and implementation of an awareness driven 3D videoconferencing application that
runs on a peer-to-peer architecture and our own End System Mult ...

Keywords: 3D videoconferencing, awareness management, end system multicast, peer-to-
peer

10 Overlay & peer-to-peer networks: SplitStream: high-bandwidth multicast in cooperative
environments
Miguel Castro, Peter Druschel, Anne-Marie Kermarrec, Animesh Nandi, Antony Rowstron, Atul
Singh
October 2003 **Proceedings of the nineteenth ACM symposium on Operating systems
principles**
Full text available: pdf(847.74 KB)   Additional Information: full citation, abstract, references, citings, index

In tree-based multicast systems, a relatively small number of interior nodes carry the load of forwarding multicast messages. This works well when the interior nodes are highly-available, dedicated infrastructure routers but it poses a problem for application-level multicast in peer-to-peer systems. SplitStream addresses this problem by striping the content across a forest of interior-node-disjoint multicast trees that distributes the forwarding load among all participating peers. For example, i ...

Keywords: application-level multicast, content distribution, end-system multicast, peer-to-peer, video streaming

11 Mobile wireless networks: A comparison of network and application layer multicast for mobile IPv6 networks

A. Garyfalos, K. Almeroth, J. Finney

September 2003 **Proceedings of the 6th international workshop on Modeling analysis and simulation of wireless and mobile systems**

Full text available: pdf(228.26 KB)   Additional Information: full citation, abstract, references, index terms

In this paper we compare Network (IP multicast) and Application Layer Multicast (ALM) under a specific assumption: end hosts are wireless devices using the Mobile IPv6 (MIPv6) protocol. This comparison has three main goals. First, we analyze the implications of running multicast in a mobile, wireless network using Mobile IPv6 (MIPv6). Second, we run a number of simulations to verify whether the network performance issues are different than in wired networks. Finally, using these results, we try ...

Keywords: IP multicast, application layer multicast, mobile IPv6

12 Routing and forwarding: Manycast: exploring the space between anycast and multicast in ad hoc networks

Casey Carter, Seung Yi, Prashant Ratanchandani, Robin Kravets

September 2003 **Proceedings of the 9th annual international conference on Mobile computing and networking**

Full text available: pdf(170.59 KB)   Additional Information: full citation, abstract, references, index terms

The characteristics of ad hoc networks naturally encourage the deployment of distributed services. Although current networks implement group communication methods, they do not support the needs of a mobile node that must locate one or more distributed servers. A node should not need detailed knowledge of network topology to choose servers with which it can communicate efficiently.To this end, manycast is a group communication scheme that enables communication with an arbitrary (user specified) n ...

Keywords: ad hoc routing, manycast, service location

13 Denial-of-service: Robustness to inflated subscription in multicast congestion control

Sergey Gorinsky, Sugat Jain, Harrick Vin, Yongguang Zhang

August 2003 **Proceedings of the 2003 conference on Applications, technologies, architectures, and protocols for computer communications**

Full text available: pdf(282.59 KB)   Additional Information: full citation, abstract, references, index terms

Group subscription is a useful mechanism for multicast congestion control: RLM, RLC, FLID-DL, and WEBRC form a promising line of multi-group protocols where receivers provide no feedback to the sender but control congestion via group membership regulation. Unfortunately, the group subscription mechanism also offers receivers an opportunity to

elicit self-beneficial bandwidth allocations. In particular, a misbehaving receiver can ignoreguidelines for group subscription and choose an un ...

Keywords: congestion control, fair bandwidth allocation, misbehaving receivers, multicast, robustness

14 Analysis of reliable multicast algorithms for local networks
Paul V. Mockapetris
October 1983 **ACM SIGCOMM Computer Communication Review , Proceedings of the eighth symposium on Data communications**, Volume 13 Issue 4

Full text available: pdf(693.29 KB)   Additional Information: full citation, abstract, references, citings, index terms

Local networks offer unique opportunities for supporting multicast transmissions. This paper describes and analyzes several families of multicast algorithms for local networks. The algorithms examined provide reliable service by dealing with the effects of transmission errors.

15 Peer to peer systems: Borg: a hybrid protocol for scalable application-level multicast in peer-to-peer networks
Rongmei Zhang, Y. Charlie Hu
June 2003 **Proceedings of the 13th international workshop on Network and operating systems support for digital audio and video**

Full text available: pdf(260.27 KB)   Additional Information: full citation, abstract, references, index terms

Multicast avoids sending repeated packets over the same network links and thus offers the promise of supporting multimedia streaming over wide-area networks. Previously, two opposite multicast schemes -- forward-path forwarding and reverse-path forwarding -- have been proposed on top of structured peer-to-peer (p2p) overlay networks. This paper presents Borg, a new scalable application-level multicast system built on top of p2p overlay networks. Borg is a hybrid protocol that exploits the asymme ...

Keywords: application-level multicast, group communication, peer-to-peer, scalability

16 Technical papers: Efficient micro-mobility using intra-domain multicast-based mechanisms (M&M)
Ahmed Helmy, Muhammad Jaseemuddin, Ganesha Bhaskara
November 2002 **ACM SIGCOMM Computer Communication Review**, Volume 32 Issue 5

Full text available: pdf(1.03 MB)   Additional Information: full citation, abstract, references, citings, index terms

One very important metric in evaluation of IP mobility protocols is handover performance. Handover occurs when a mobile node changes its network point-of-attachment. If not performed efficiently, handover delays, jitters and packet loss directly impact applications and services. With the Internet growth and heterogeneity, it becomes crucial to design efficient handover protocols that are scalable, robust and incrementally deployable. Mobile IP (MIP) has been shown to exhibit poor handover perfor ...

17 Scalable application layer multicast
Suman Banerjee, Bobby Bhattacharjee, Christopher Kommareddy
August 2002 **ACM SIGCOMM Computer Communication Review , Proceedings of the 2002 conference on Applications, technologies, architectures, and protocols for computer communications**, Volume 32 Issue 4

Full text available: pdf(561.69 KB)   Additional Information: full citation, abstract, references, citings, index

We describe a new scalable application-layer multicast protocol, specifically designed for low-bandwidth, data streaming applications with large receiver sets. Our scheme is based upon a hierarchical clustering of the application-layer multicast peers and can support a number of different data delivery trees with desirable properties.We present extensive simulations of both our protocol and the Narada application-layer multicast protocol over Internet-like topologies. Our results show that for g ...

Keywords: application layer multicast, hierarchy, overlay networks, peer-to-peer systems, scalability

18 Session 6: networks (WAN/LAN): Design and implementation of multicast operations for ATM-based high performance computing
Chengchang Huang, Eric P. Kasten, Philip K. McKinley
November 1994 **Proceedings of the 1994 ACM/IEEE conference on Supercomputing**
Full text available: pdf(1.00 MB)   Additional Information: full citation, abstract, references

This paper presents the results of an investigation into the efficient implementation of multicast operations for cluster-based parallel computing on Asynchronous Transfer Mode (ATM) networks. Both software- and hardware-based multicast operations have been implemented and studied on a three-switch ATM network testbed. Performance measurements are presented that illustrate how software approaches can best take advantage of switch-based network architectures, and what additional advantage can be ...

19 Unicast and Multicast in Next Generation Wireless Networks: Multicasting vs. unicasting in mobile communication systems
Janne Aaltonen, Jouni Karvo, Samuli Aalto
September 2002 **Proceedings of the 5th ACM international workshop on Wireless mobile multimedia**
Full text available: pdf(123.39 KB)   Additional Information: full citation, abstract, references, index terms

We evaluate the multicasting gain over unicast in the cellular networks, where cells are engineered for a specific target call blocking probability. Our approach is Monte-Carlo simulation of dynamic multicast connections, and the traditional Engset model for the unicast traffic. We predict the gain given by multicasting by using earlier studied traffic patterns, and conclude that intervention of the network operator is needed to secure a significant multicasting gain.

Keywords: blocking, dimensioning, mobile networks, multicast

20 Unicast and Multicast in Next Generation Wireless Networks: Multicast in 3G networks:: employment of existing IP multicast protocols in UMTS
Mariann Hauge, Øyvind Kure
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Full text available: pdf(338.06 KB)   Additional Information: full citation, abstract, references, index terms

In this article we discuss the use of commonly deployed IP multicast protocols in UMTS networks. We analyze three possible UMTS multicast architectures, all employing standard IP multicast protocols. We study the architectures' ability to handle: group management, data-security, authentication and authorization of multicast source/receivers, multicast session identification, terminal mobility and collection of billing data. For one of the architectures we quantify the performance of the design f ...

Keywords: IGMP, SSM, UMTS, multicast, wireless internet